

Remarks

This reply responds to the Office Action mailed August 27, 2009. With this amendment, claims 1-23 and 26 are canceled without prejudice or disclaimer of the subject matter recited therein; and claims 29-40 are added. Claims 24, 25, 27, and 28 have previously been canceled. Accordingly, claims 29-40 are pending.

Support for the amendment can be found throughout the application as filed, including, for example, Applicants' specification, Table 13 on pages 57, 58 and 60, and page 66, lines 14-21.

Reconsideration and allowance of the application are respectfully requested.

Restriction Requirement

The Office has maintained the Restriction Requirement and has made the requirement Final. Applicants' election with traverse of Group I, claims 13-23, drawn to a product of formula IA, and the species election of Compound 237, is acknowledged. Group II, claims 1-12 and 26, drawn to method of inhibiting mitotic kinesin Eg5, stand withdrawn from consideration as being directed to non-elected subject matter. The Office has further stated that no generic claim encompassing the elected species was found patentable; therefore, the provisional election of species has been given effect. Consequently, claims 20 and 21 have also been withdrawn from consideration.

In response, claims 1-23 and 26 have been canceled, and claims 29-40 have been added. Applicants note that claims 29-34 are drawn to products of formula IA (Group I), with claims 29 and 32 being generic, and claims 29, 31, 32, and 34 being readable on the elected species Compound 237. Moreover, claims 35-40 are drawn to methods of inhibiting mitotic kinesin Eg5

and therefore should be included in non-elected Group II. Therefore, claims 30, 33, and 35-40 have been labeled as being withdrawn as these claims are directed to non-elected subject matter.

Applicants respectfully request that the non-elected claims be rejoined upon allowance of the elected invention.

Foreign Priority

Applicants thank the Examiner for acknowledging the claim of foreign priority as well as receipt of the certified copies of the priority applications.

Information Disclosure Statement

Applicants thank the Examiner for acknowledging receipt of the Information Disclosure Statements filed on September 1, 2006, April 10, 2007, May 10, 2007, September 8, 2008, November 17, 2008, and June 26, 2009, and for returning signed copies of the Forms PTO-1449 submitted therewith.

Response to Claim Rejection Under 35 U.S.C. § 103

Claims 13-17, 22, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 03/051854 (abstract from CAPLUS Accession # 2003:491200) to Murakata et al. (which published as U.S. Published Application 2006/0074113 A1, and which issued as U.S. Patent 7,425,636 (which is used in an obviousness-type double patenting rejection) in view of Silverman (The Org. Chem. of Drug Design and Drug Action, (1992), pages 4-51).

Applicants initially note that WO 03/051854 is in Japanese, and U.S. Published Patent Application 2006/0074113 A1 is the U.S. National Stage Application of WO 03/051854.

Therefore, in this response, reference to the disclosure of Murakata et al. will be with respect to the published U.S. application, which will be referred to herein as "Murakata".

Moreover, Applicants note that U.S. Patent 7,425,636 B2 is not listed on a Form PTO-948 by the Examiner. Accordingly, Applicants list this patent on a Form PTO-1449 submitted herewith. The Examiner is requested to forward an initialed copy of the form with the next communication from the Patent and Trademark Office.

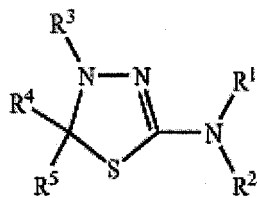
The rejection contends that Murakata teaches the genus and structurally related species in the genus. The rejection relies on Silverman to teach that lengthening a carbon chain by increasing successive CH₂ groups increases pharmacological effects.

In response, and without expressing agreement or acquiescence to the propriety of the rejection, Applicants have canceled claims 13-17, 22, and 23 without prejudice or disclaimer of the subject matter recited therein, and have added claims 29-40.

Applicants submit that the pending claims are not *prima facie* obvious over Murakata in view of Silverman because there is no reason to modify or combine the teachings as asserted in the rejection, and there is no expectation of success in the modification or combination.

The rejection asserts that it would be obvious to choose Compound 173, 174, or 175 and to modify any one of those compounds in view of Silverman. Applicants disagree with the assertions set forth in the rejection.

Applicants submit that Murakata discloses such a vast number of compounds that there is a lack of motivation to pick and choose any compound, let alone the compounds asserted in the rejection, in an attempt to arrive at Applicants' claimed compounds. In particular, Murakata



teaches general formula (I) containing different types of functional groups, as recited in Tables 1-13, on pages 12-22 of U.S. Published Application 2006/0074113 A1, which encompasses a large number of structurally varied compounds. Furthermore, there is nothing in Murakata that provides a reason for one of ordinary skill in the art to choose any of Compounds 173, 174, or 175, cited in the Action, or any related compound, such as Compound 177, to modify or combine with the teachings of Silverman.

Applicants remind the Examiner that in order to establish a *prima facie* case for obviousness with regard to a novel compound, the motivation of one skilled in the art to conduct a chemical modification of a known compound in a particular manner is important. For example, in *Takeda Chem. Indus. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356 (Fed. Cir. 2007), the Court states that:

[n]ormally a *prima facie* case of obviousness is based upon structural similarity, i.e., an established structural relationship between a prior art compound and the claimed compound.” That is so because close or established “[s]tructural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds.” *In re Deuel*, 51 F.3d 1552, 1558 (Fed. Cir. 1995). A known compound may suggest its homolog, analog, or isomer because such compounds “often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties.” *Id.* We clarified, however, that in order to find a *prima facie* case of unpatentability in such instances, a showing that the “prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention” was also required. *Id.* (citing *In re Jones*, 958 F.2d 347 (Fed. Cir. 1992); *Dillon*, 919 F.2d 688; *Grabiak*, 769 F.2d 729; *In re Lalu*, 747 F.2d 703 (Fed. Cir. 1984)).

(Emphasis added).

The Court further states that this “test for *prima facie* obviousness for chemical compounds is consistent with the legal principles enunciated in *KSR*.” *Id.* The Court also

says that “cases involving new chemical compounds, *it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound.*” (Emphasis added). Id. at 1357.

In analyzing the lower court’s rationale, the Federal Circuit stated that “[w]ith regard to homologation, the [lower] court found nothing in the prior art to provide a reasonable expectation that adding a methyl group to compound b would reduce or eliminate its toxicity.” Id. at 1360.

A similar situation is present in the instant situation wherein Applicants’ claimed subject matter is not rendered obvious by the prior art. There is no reason present in the disclosure of Murakata to arrive at the compounds recited in Applicants’ claims. There must be some motivation to pick and choose specific compounds from amongst the diverse compounds disclosed in Murakata, and then to modify such compounds in a specific manner as asserted in the rejection.

In the instant situation, the rejection has not established any reason for picking and choosing the compounds noted in the rejection let alone any reason for modifying such compounds in one specific manner. Thus, one having ordinary skill in the art would not have chosen the specific compounds noted in the rejection, and would not have sought to modify such compounds in Murakata by adding CH₂ at any particular location of a compound. Similarly, Silverman fails to provide a reason to modify any particular compound in Murakata by adding CH₂ at a particular location. Further, there is no reason to combine the teachings of Murakata and Silverman to add CH₂ at any particular location of a compound in Murakata.

Still further, while there is no motivation to make the combination of Murakata and Silverman asserted in the rejected, Applicants further note that there are various locations on compounds disclosed in Murakata where a CH₂ group can be added. However, neither Murakata nor Silverman provides guidance as to any particular location where the CH₂ group should be added. Thus, the rejection uses improper hindsight in an attempt to arrive at Applicants' claimed compounds.

Still further, the rejection contends that Silverman teaches lengthening a carbon chain by increasing successive CH₂ groups increases pharmacological effects. Applicants note that the introduction of molecules, such as CH₂, to a compound would be expected to affect the conformational structure of the compound. In fact, introduction of molecules can result in significant three-dimensional conformational changes that can affect the pharmacological activity of a compound. Applicants submit that for this additional reason there is no expectation of success in modifying Murakata in view of Silverman to arrive at compounds with increased pharmacological activity.

In view of the foregoing, Applicants respectfully submit that the rejection over claims 13-17, 22, and 23 should be withdrawn, and claims 29-40 should be allowed.

Response to Claim Rejections Under Non-Statutory Obviousness-Type Double Patenting

U.S. Application No. 11/909,324

Claims 13-17, 22, and 23 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-6, 8, 10, 11-13 of co-pending U.S. Application No. 11/909,324 in view of Silverman.

The rejection contends that although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the co-pending application overlap in subject matter and teach species that are the same (for example compound 173, referred to on page 6 of the Office Action, in the 35 U.S.C. § 103 rejection).

Applicants note that compound (n) recited in claim 11 of the '324 application is the same as that of elected species 237 of the present application, and compound (p) is the same as recited compound 221. However, Applicants respectfully submit that the present application was filed earlier than the above-cited co-pending application. Applicants further note that MPEP § 804(I)(B)(1) states that "[i]f a 'provisional' nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer."

Thus, Applicants respectfully request withdrawal of the provisional obviousness-type double patenting rejection.

U.S. Application No. 11/798,214

Claims 13-17, 22, and 23 are also provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of co-pending Application No. 11/798,214 in view of Silverman.

Applicants note that co-pending Application No. 11/798,214 is abandoned. Therefore, the nonstatutory double patenting rejection should be withdrawn.

U.S. Patent No. 7,425,636

Claims 13-17, 22, and 23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 7,425,636 in view of Silverman.

The rejection contends that although the conflicting claims are not identical, they are not patentably distinct from each other because, allegedly, the claims of the cited patent overlap in subject matter and recite species that are the same (for example compound 173, referred to on page 6 of the Office Action, in the 35 U.S.C. § 103 rejection). Applicants note that the rejection relies on Silverman to teach that lengthening a carbon chain by increasing successive CH₂ groups increases pharmacological effects (see Office Action, page 7, under the 35 U.S.C. §103 rejection).

In response, as noted above, U.S. Patent No. 7,425,636 is the issued national stage of the Murakata used in the obviousness rejection. Accordingly, for at least the reasons set forth above, the rejection is without appropriate basis and should be withdrawn.

In view of the foregoing, Applicants respectfully request withdrawal of the nonstatutory obviousness-type double patenting and the provisional nonstatutory obviousness-type double patenting rejections.

Response to Claim Rejection Under 35 U.S.C. § 112, Second Paragraph

Claim 22 is rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as Applicants' invention. In particular, claim 22 allegedly uses the phrase "mentioned above"

without particularly or distinctly describing what “above” refers to. Therefore, the metes and bounds of the claims are allegedly indefinite.

Applicants note that claim 22 has been canceled without expressing any agreement or acquiescence with the rejection of record. Thus, the 35 U.S.C. 112, second paragraph, rejection should be withdrawn.

Response to Claim Rejection Under 35 U.S.C. § 112, First Paragraph

Claims 13-19, 22, and 23 are rejected under 35 U.S.C. 112, first paragraph for allegedly failing to comply with the enablement requirement. The rejection contends that the specification, while enabling for the compounds identified as having inhibitory effect with relevant data, does not reasonably provide enablement for the claimed utility for the entirety of the claim scope.

Applicants initially note that the rejection is without appropriate basis in that the specification provides sufficient enablement for the disclosed compounds. Nevertheless, in response, and without expressing agreement or acquiescence to the propriety of the rejection, Applicants have canceled claims 13-19, 22, and 23. Applicants preserve the right to submit the canceled claims in one or more continuation applications, and to present arguments for patentability.

Applicants submit that newly-added claims 29-40 are enabled. In particular, the specification demonstrates how to make and use the compounds, and identifies the inhibitory effects of the compounds recited in claims 29-40 (see for example, specification at page 65, Test Example 4, lines 12-33 and page 66, lines 1-17; page 78, Example 26, lines 16-25; page 83, Example 42, lines 21-31; and page 90, Example 69, lines 6-8).

Applicants respectfully submit that the 35 U.S.C. 112, first paragraph, rejection should be withdrawn.

Response to Claim Rejection Under 35 U.S.C. § 112, First Paragraph

Claims 13-19, 22, and 23 are rejected under 35 U.S.C. 112, first paragraph for allegedly failing to comply with the written description requirement. The rejection contends that the claims contain the amendment "except when q=3," which allegedly does not have sufficient support in the disclosure.

Applicants initially note that the rejection is without appropriate basis in that there is adequate written description in the specification for the term "except when q=3" as discussed in the response to the Restriction Requirement filed June 5, 2009.

Nevertheless, in response, and without expressing agreement or acquiescence to the propriety of the rejection, Applicants have canceled claims 13-19, 22, and 23. Applicants preserve the right to submit the canceled claims in one or more continuation applications, and to present arguments that the claims comply with the written description requirement.

Applicants respectfully submit that the 35 U.S.C. 112, first paragraph, rejection should be withdrawn.

CONCLUSION

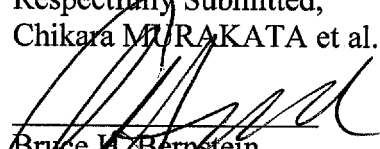
In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the restriction requirement and rejections of record, and allow each of the pending claims.

Applicants therefore respectfully request that an early indication of allowance of the

application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully Submitted,
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November 25, 2009
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